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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

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OFFICE OF RECOGNISSION

In the Matter of

Price Cap Performance Review for Local Exchange Carriers

CC Docket No. 94-1

MOTION TO COMPEL PRODUCTION OF SUPPORTING DATA

Economic Consultant:

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May 27, 1994

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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

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MOTION TO COMPEL PRODUCTION OF SUPPORTING DATA

The Ad Hoc Telecommunications Users Committee ("Ad Hoc") hereby requests that the Federal Communications Commission ("FCC" or "Commission") compel the United States Telephone Association ("USTA") to provide underlying data and certain relevant results that were omitted from the report entitled "Productivity of the Local Telephone Operating Companies" (the "Christensen Study" or the "Study") submitted to support USTA's May 9, 1994 comments in this proceeding (Attachment 6 to USTA Comments). 1/2

Without such underlying data, the Christensen Study is incomplete and can be given no weight or otherwise used as a basis for resolution of the Commission's inquiry in this proceeding. Indeed, as noted by Dr. Roddy, the omission of this data makes it extremely difficult, if not impossible, to evaluate the Christensen Study. Moreover, and as further shown in the Affidavit of Dr. Roddy, not only is the underlying data requested by this Motion highly

As shown in the Affidavit of Dr. David J. Roddy, Vice President and Senior Economist at Economics and Technology, Inc., attached hereto as Exhibit A ("the Affidavit"), the specific results omitted from the Christensen Study are the input <u>price</u> growth rates associated with the total input <u>quantity</u> growth rates shown in Table 1 at page 11 of the Christensen Study, [Affidavit at p.2.]

relevant to the issues in this proceeding, it is not readily accessible to the FCC or interested third parties without extensive and time-consuming study, is not proprietary to the LECs in aggregate form, but is similar to data made public in analogous state regulatory proceedings. Thus, there is no reason it cannot be produced. The Commission should require the submission of this data so that it may be evaluated and the Commission adequately assured that the administrative record is complete on this issue. If the Commission were to rely on the Christensen Study in its present incomplete form, such reliance would be arbitrary and capricious.

I. The Commission Should Grant This Metion so that the Commission and Other Commenting Parties Can Test USTA's Assertions.

The Christensen Study addresses Baseline Issue 3, wherein the Commission requested comments on possible adjustments in the "X factor," a fundamental issue in this proceeding. USTA submitted the Christensen Study to support its position that the productivity offset in the price cap formula for Tier 1 Local Exchange Carriers ("LECs") should not be raised.

USTA asserts, citing the Study, that the Commission's current 3.3% "X factor" value is the correct productivity offset for use in the Commission's Price Caps Plan. The Christensen Study argues that the percentage of change in the input price growth rates confronted by LECs rose at a rate of the GDP-PI plus 0.9%. The Study does not, however, provide underlying data on

Notice of Proposed Rulemaking, In the Matter of Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, 9 FCC Rcd 1390 (1994), paragraphs 43-46.

relevant price inputs required to support this contention. Rather, Professor Christensen's calculations simply assume that LEC input prices rose at the rate of GDP-PI plus 0.9% during the 1984 - 1992 time period. [Affidavit at 3-4.]

The missing price input data is obviously relevant and, indeed, essential to testing the Study's results regarding economy-wide price and productivity conditions. The importance of this data is explained by Dr. J. Roddy:

It is my belief that this information is highly relevant and probative to the FCC's investigation. . . . [W]ithout this information, the Commission has no basis upon which to test or evaluate the credibility of the Christensen 1994 Study or the significance of its reported results vis-a-vis economy-wide price and productivity conditions. [Affidavit at 2.]

Given its importance, the Commission should compel USTA to provide all data underlying the Christensen Study to ensure adequate review and analysis of the Study's findings by both the Commission during this rulemaking procedure, and by interested parties during the reply comment period.³/

Specifically, Ad Hoc requests the Commission to direct that USTA provide: (1) The annual price and quantity indexes for each of the three points: capital, labor, and materials, as well as total input, all for each of the years 1984 through 1992; (2) The annual cost shares for each of the inputs for each of the years 1984 through 1992; (3) The annual price and quantity indexes for each of the seven outputs — local services, interstate end user access, interstate switched access, interstate special access, intrastate access, long distance service, and miscellaneous services — as well as total output, all for each of the years 1984 and 1992; and (4) The annual revenue shares for each of the outputs for each of the years 1984 through 1992. [Affidavit at 3.]

II. USTA Provides No Reasonable Justification For the Omission of Essential And Otherwise Not Readily Available Price Input Data From the Christensen Study.

There is no apparent justification for USTA's omission of the price input data underlying the Study. The data requested undeniably exists. Further, as stated by Dr. Roddy, this data is not proprietary in the aggregate form and, in fact, equivalent type data has been provided by Dr. Christensen in three analogous regulatory proceedings conducted in Illinois, Indiana, and Ohio. [Affidavit at 4, note 6.]. Although the data sought by this Motion is relatively simple for USTA to provide, and critically necessary to test the results of the Christensen Study, it would be impossible for the FCC or a third party to duplicate the figures during the pleading cycle established for this proceeding. [Affidavit at 2.]

III. <u>Disparity Between the Conclusions Demonstrated in Other Studies</u> Submitted To the Commission During This Proceeding and Analogous State Regulatory Proceedings, Compels Further Disclosure of USTA's Data.

The Christensen Study's conclusion -- that the Commission's current 3.3% "X factor" value is the correct productivity offset for use in the Commission's Price Caps Plan -- is sharply inconsistent with the other studies submitted by commenters to this proceeding which demonstrated that the productivity offset should be higher than the current 3.3%. Unlike the Christensen Study, the Ad Hoc Committee has provided specific data

Comments of AT&T, p. 22; Comments of MCI, p. 24.

developed in seven separate state price cap proceedings that demonstrate that LEC input prices in fact grew less than the GDP-PI.5/ This conclusion is bolstered by state regulatory proceedings on price cap regulations in three states where Administrative Law Judges ("ALJs") recently accepted productivity offsets to formulate higher "X factors" for state-wide price cap plans than the figure proposed by the Christensen Study. In California, a 6.0% calculation for the "X factor" was adopted after hearings and deliberations on the issue⁶ In Pennsylvania, the ALJ found that "Bell's input prices are rising slower than the input prices of the economy as a whole." The "X factor" adopted in Pennsylvania was 5.29%, again significantly larger the Christensen Study's proposed 3.3% factor.²/ In current proceedings before the Illinois Commerce Commission, calculations based upon standard economic theory and Illinois Bell data has demonstrated that Illinois Bell experienced an input price inflation growth rate represented by the GDP-PI minus 1.6, indicating that Illinois Bell's input prices grew at a rate of 2.5% slower than economy-wide

Comments of the Ad Hoc Telecommunications Users Committee, CC Docket No. 94-1, Attachment A: LEC Price Cap Regulation: Fixing the Problems and Fulfilling the Promise; page 59, Table 6.

Proposed Decision of ALJ Reed, California NRF Review, California Public Utility Commission, Applications 92-05-002 and 92-05-004, Applications of GTE California and Pacific Bell for Review of the Operations of the Incentive-Based Regulatory Framework adopted in California PUCD.89-10-031, March 7, 1994, at 11-12.

Proposed Decision of ALJs, Pennsylvania Public Utility Commission, Docket No. 930715, The Bell Telephone Company of Pennsylvania's Petition and Plan for an Alternative Form of Regulation Under Chapter 30 of the Public utility Code, April 29, 1994 at 175.

prices to support an "X factor" of 3.8%. Given the disparate results of the Christensen Study when compared to the results of the analyses of the Ad Hoc Committee and other parties to this proceeding, and the findings of these state Commissions, the Commission should compel USTA to provide the underlying data requested here so that the Christensen Study can be adequately assessed.

IV. CONCLUSION

Resolution of the X factor issue in this proceeding has enormous potential consequences. The wide divergence between the proposed productivity offset levels argued for by the LECs, and the acutely lower X factor values supported by the economic studies presented by the Ad Hoc Committee and other parties, could well amount to billions of dollars for consumers of telecommunications services over the next several years. The Commission's selection of the productivity offset to be used in the LEC price cap formula thus will have far reaching implications for telecommunications rates generally, the future of competition in the provision of local exchange and exchange access services, and for the economy as a whole. It is therefore vital that parties not be permitted to hide from Commission scrutiny and the review of other interested parties data underlying productivity factor studies submitted to the Commission in this proceeding.

Proposed Decision of Hearing Examiners, May 3, 1994, Illinois Commerce Commission docket No. 92-0448, In the Matter of Illinois Bell Telephone Company's Petition to Regulator Rates and Charges of Noncompetitive Service under an Alternative Form of Regulation, at 37.

For the foregoing reasons, the Ad Hoc Telecommunications Users

Committee respectfully requests that the Commission compel the United States

Telephone Association to provide supporting data and results that were

omitted from the Christensen Study.

Respectfully Submitted,

Ad Hoc Telecommunications
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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C 20554

In the Matter of)	
)	
Price Cap Performance Review for)	CC Docket No. 94-1
Local Exchange Carriers)	

AFFIDAVIT OF DAVID J. RODDY

David J. Roddy, being first duly sworn, deposes and says:

1. My name is David J. Roddy. I am a Vice President and Senior Economist at Economics and Technology, Inc. (ETI), One Washington Mall, Boston, Massachusetts 02108. I have a Ph.D. in Economics from the University of Wisconsin, where I specialized in Econometrics and the Economics of Regulated Industries. Among other things, my graduate work involved the estimation of cost and production functions as well as studies of industry productivity and economies of scale. In the course of my work at ETI, I have prepared studies and/or expert testimony regarding Local Exchange Carrier ("LEC") productivity and input price growth rates for submission in price cap or other incentive regulation proceedings before telecommunications regulatory authorities in New York, California, Illinois, Pennsylvania, Delaware, and Ohio, as well as before this Commission in the establishment of the LEC Price Caps Program in CC Docket No. 87-313. A more detailed summary of my experience and qualifications is provided as

Appendix 1 hereto and made a part hereof.

- 2. The Ad Hoc Telecommunications Users Committee ("Ad Hoc" or "Committee") has asked me to evaluate the LEC productivity study submitted by Dr. Laurits Christensen¹ as Attachment 6 to the *Comments of the United States Telephone Association* filed with the Commission by USTA on May 9, 1994 in CC Docket 94-1. ("Christensen 1994 Study").
- 3. In reviewing the Christensen 1994 Study, I have determined that certain relevant results and underlying data were omitted in the final study report that was submitted as Attachment 6 to the USTA Comments. The omission of these results has made it extremely difficult, if not impossible, for me or any other examiner to prepare a complete evaluation of the Christensen 1994 Study. The specific results that were omitted are the *input price growth rates* that are associated with the total input *quantity* growth rates that are shown in Table 1 at page 11 of the Christensen 1994 Study. It is my belief that this information is highly relevant and probative to the FCC's investigation, that it is readily available, easy to provide, not proprietary at the aggregate level, and impossible to duplicate in the time frame allotted for reply. Without this information, the Commission has no basis upon which to test or evaluate the credibility of the Christensen 1994 Study or the significance of its reported results vis-a-vis economy-wide price and productivity conditions. Accordingly, the Commission should require that USTA provide this information, or in its absence should afford no weight to the Christensen 1994 Study and

^{1.} A complete citation for the study is: L. Christensen, P. Schoech, and M. Meitzen, "Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation", Christensen Associates, May 3, 1994.

the USTA (and other LEC) claims that have been predicated upon it.

- 4. The information that should be provided consists of the following specific items:
- (1) The annual *price* and *quantity* indexes for each of the three inputs capital, labor, and materials² as well as for total input, all for each of the years 1984 through 1992.
- (2) The annual cost shares for each of the inputs for each of the years 1984 through 1992.
- (3) The annual *price* and *quantity* indexes for each of the seven outputs local service, interstate end user access, interstate switched access, interstate special access, intrastate access, long distance service, and miscellaneous services³ as well as for total output, all for each of the years 1984 through 1992. (4) The annual revenue shares for each of the outputs for each of the years 1984 through 1992. All of this data should be provided individually for each of the LECs in the study.
- 5. According to the USTA, the Christensen 1994 Study supports USTA's position that the current 3.3% "X factor" value (and the alternative 4.3% value) is the correct productivity offset for use in the Commission's LEC Price Caps Plan. This conclusion is based, in part, on Prof. Christensen's calculations which assume that LEC input prices rose at the rate of GDP-PI plus 0.9% during the 1984-1992 time period.⁴ That assumption, which is

^{2.} See Christensen 1994 Study at 4.

^{3.} See Christensen 1994 Study at 1.

^{4.} Christensen 1994 Study at ii. The LECs' input price assumption is the basis for the subtraction of the average annual economy-wide TFP growth of 0.9% from average annual LEC TFP growth of 2.6%. For additional discussion, see ETI Report, "LEC Price Cap Regulation: Fixing the Problems and Fulfilling the Promise," ("ETI Report") at 48-52; 56-59; and Table 6, attached to the Comments of the Ad Hoc Telecommunications Users Committee.

critical to the USTA/Christensen position, is nowhere supported by studies or data that have been offered in this record. By contrast, the Ad Hoc Committee has provided specific data developed in seven separate state price cap proceedings that demonstrate that LEC input prices grew *less*, not more, than GDP-PI.⁵ Indeed, three of the state-by-state results reported by Ad Hoc were derived from data provided by the same Dr. Christensen in state-level studies that he prepared and that are analogous to the national Christensen study submitted here by USTA.⁶ The LEC productivity results developed for USTA by Prof. Christensen were developed utilizing input price changes specifically confronting LECs, and it is incomplete in this context to present only the productivity results and to omit the input price results. When LEC-specific input price changes are considered, as in Table 6 of the ETI Report, an increase in the magnitude of the X factor is indicated.

6. Furthermore, recommended decisions issued by Administrative Law Judges in three states have accepted this input price correction to the approach that was advanced by LECs in those states and by USTA here.⁷ It is thus eminently clear that the input price growth rate is a critical and relevant parameter in the Commission's evaluation of the

^{5.} See ETI Report, Table 6 at 59.

^{6.} In the state level studies referenced (Illinois, Indiana, and Ohio), Dr. Christensen provided enough data for me to derive the input price results. In the Christensen 1994 Study, no such data are provided.

^{7.} Proposed Decision of ALJ Reed, California NRF Review, California Public Utility Commission, Applications 92-05-002 and 92-05-004, Applications of GTE California and Pacific Bell for Review of the Operation of the Incentive-Based Regulatory Framework adopted in California PUC D.89-10-031, March 7, 1994 at 11-12; Recommended Decision, Pennsylvania Public Utility Commission, Docket No. 930715, The Bell Telephone Company of Pennsylvania's Petition and Plan for an Alternative Form of Regulation Under Chapter 30 of the Public Utility Code, April 29, 1994 at 175; Hearing Examiners' Proposed Order, May 3, 1994, Illinois Commerce Commission Docket No. 92-0448, In the Matter of Illinois Bell Telephone Company's Petition to Regulate Rates and Charges of Noncompetitive Services under an Alternative Form of Regulation, at 37.

LEC Price Cap Plan. Specifically, the Commission can use the input price information to determine the validity of the USTA assumption that LEC input prices grow at a rate faster than GDP-PI.⁸ If this information is not provided, it would be reasonable to conclude that the input price differential is in the range of Prof. Christensen's publicly available results calculated on behalf of Ameritech. That data shows that LEC input prices can be represented as GDP-PI minus 1.6 for Illinois Bell, GDP-PI minus 1.0 for Ohio Bell, and GDP-PI minus 0.8 for Indiana Bell.⁹ These results clearly indicate that the Christensen assumption implicit in the USTA report, that 'LEC input prices increased at the rate of GDP-PI plus 0.9', is in error.¹⁰

7. The input price growth rates are a by-product of Prof. Christensen's methodology and are thus readily available and easy to provide. Every total factor productivity study includes an analysis of the total input *quantity* growth rate, such as that presented at page 11 of the Christensen 1994 Study. Such an analysis also requires that input prices for each of the individual inputs (i.e., materials, labor, and capital) be calculated. Furthermore, the input *price* growth rate for all inputs combined (called "total input") can easily be calculated by simple division. Such a calculation is provided by Dr. Christensen

^{8.} The provision of the input price growth rates would also directly respond to the Commission's request at paragraph 44 of the NPRM regarding the effects of "sharply declining interest rates, which have fallen to their lowest levels in many years."

^{9.} See ETI Report, Table 6 at 59. The GDP-PI grew at 3.7% for this time period. The Christensen data in the three studies show input price growth rates as follows: 2.1% for Illinois Bell, 2.7% for Ohio Bell, and 2.9% for Indiana Bell.

^{10.} Thus use of a "differential TFP" approach — which subtracts out national TFP from LEC TFP — is also clearly in error.

in his 1981 Bell System productivity study¹¹ which he cites at footnote 3 of the Christensen 1994 Study. It is a fact that his 1981 study does show the input price trends, whereas his 1994 study omits them. Furthermore, Dr. Christensen recently provided this relevant input price information in price caps regulatory dockets in Ohio and Illinois.¹²

- 8. It is also my belief that the information identified in para. 4 *supra* is not proprietary at the aggregate level, and that such aggregate level information will be sufficient for input price movement calculations to be made. Dr. Christensen has submitted analogous information in several recent Ameritech proceedings in two states without a claim of confidentiality. Furthermore, although some of the underlying Telephone Plant Indexes ("TPIs") are sometimes cited as proprietary by LECs, the overall capital input price index, which is calculated from them, is far too aggregated to justify a claim of confidentiality. In fact, such aggregate information cannot be used to "reverse-engineer" the data and obtain the underlying proprietary data.
 - 9. In my experience, such information would be impossible to duplicate within the

^{11.} L. Christensen, D. Christensen, and P. Schoech, "Total Factor Productivity in the Bell System, 1947-1979", Christensen Associates, September, 1981, at 57.

^{12.} In Public Utility Commission of Ohio Docket No. 93-487-TP-ALT, Dr. Christensen provided the input price growth rates in response to data requests — Ohio Bell Response to Time Warner A_xS Data Request No. 2 at response 68 (November 4, 1993) and Ohio Bell Response to Time Warner A_xS Data Request No. 4 at response 147 (April 20, 1994). In Illinois, this information was provided in Rebuttal Testimony of Laurits Christensen, Illinois Bell Exhibit 5.6 (September, 1993), Illinois Commerce Commission Docket No. 92-0448, at 14. Furthermore, in all three states where Dr. Christensen submitted testimony on behalf of Ameritech (i.e., Illinois, Indiana, and Ohio), adequate data was publicly submitted so that anyone could compute the input price growth rate. As noted in footnote 6 supra, no such data are provided in the Christensen 1994 Study.

Affidavit of David J. Roddy Page 7

time frame designated by the Commission for reply in this docket, even if extensions of up to several months for reply were granted. It would in any event involve a large amount of effort and expenditure of resources.

The foregoing statements are true and correct to the best of my knowledge, information and belief.

David J. Roddy

Sworn to before me this 23^{12} day of May, 1994

Michele a. Dinum, Notary Public

My commission expires _

January Co, 19 2000

Appendix 1

Statement of Qualifications

David J. Roddy

Dr. David J. Roddy, Vice President and Senior Economist at Economics and Technology, Inc. (ETI), is a recognized expert in analyzing the economics of the telecommunications and cable television industries. He has presented expert economic testimony and studies before the Federal Communications Commission, the National Telecommunications and Information Administration, and in regulatory proceedings in New York, California, Pennsylvania, Illinois, New Jersey, Ohio, and Delaware. He received a Ph.D. in Economics at the University of Wisconsin (Madison) and is a member of the American Economic Association and the American Statistical Association.

Dr. Roddy has wide experience in analyzing telecommunications and cable television economics issues, especially projects which require data analysis and/or economic & statistical models. He has recently submitted a detailed and comprehensive study of the total factor productivity ("TFP") and input prices of Pacific Bell, GTE California, Inc. and several other California Local Exchange Carriers (LECs) on behalf of a number of business and consumer groups as well as interexchange carriers. In 1992, he completed a detailed and comprehensive study of the productivity and input prices of New York Telephone Company in a project undertaken for the New York Public Service Commission. In the past year, he has prepared studies of Ohio Bell productivity and input prices on behalf of Time Warner A,s; of Bell of Pennsylvania input prices and productivity on behalf of the Pennsylvania Cable Television Association, of Illinois Bell input prices on behalf of the Attorney General of the State of Illinois; and of Diamond State Telephone Company productivity and input prices on behalf of the Delaware Public Service Commission Staff. He has also submitted studies to the Federal Communications Commission in the LEC price caps rule making proceeding (FCC CC Docket 87-313) on behalf of the Ad Hoc Telecommunications Users Committee and the International Communications Association, two associations that are comprised of large corporate telecommunications users.

He recently completed a quantitative capital budgeting model analysis which evaluated the likelihood that LECs would face significant competition in the market for local exchange telephone services. This analysis is a chapter in the 1994 study, *The Enduring Local Bottleneck, Monopoly Power and the Local Exchange Carriers* by Economics and Technology, Inc. and Hatfield Associates and was conducted on behalf of AT&T, MCI, and CompTel. The objective of this analysis was to present a detailed "business case" economic analysis of the real costs of cable television and PCS/wireless entry into the market for provision of local service telephony. This analysis combined the estimates of actual capital expenditures required by such firms to provide telephone services with the marketing, customer services, interconnection, and associated expenses into a formal capital budgeting model. The model then calculates the net present value of the cash flow associated with various alternative entry, demand, and cost scenarios.

In the last year, Dr. Roddy has also completed a variety of economic and statistical studies related to the re-regulation of the Cable TV industry in connection with FCC MM Dockets 92-266 and 93-215, Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992, on behalf of Continental Cablevision, Inc. Formal FCC comments covered the use of regression models to estimate cable TV operator benchmark prices and the applicability of a productivity offset in the cable TV rate regulation program. He has also assisted Continental and several other cable TV MSOs in the completion of the required cable rate compliance report forms and has participated in the preparation of cable TV cost of service studies for cable operators.

Dr. Roddy has also prepared a series of studies dealing with quantitative aspects of the telecommunications network modernization debate. In New York State, Dr. Roddy recently completed a large scale network modernization survey of 1,000 residential customers and 500 small businesses for the New York Public Service Commission in connection with NY Docket 91-C-0485, Proceeding to Evaluate the Pace, Direction, and Scope of New York Telephone's Network Modernization Plans. This survey and analysis focused on consumer interest in future communications, information, and entertainment products and services as well as their willingness to pay. He has also analyzed and evaluated econometric studies by DRI/McGraw-Hill filed by the Bell Operating Companies, GTE, United, and other local exchange carriers in the NTIA Docket No. 91296-9296, Comprehensive Study of the Domestic Telecommunications Infrastructure, March 1991. The focus of Dr. Roddy's analysis, on behalf of the International Communications Association, was the quantitative relationship between economic growth and telecommunications investment. A critique of the DRI study was also part of his recent testimony in New Jersey on behalf of the New Jersey Cable Television Association in the Application of New Jersey Bell Telephone Company for Approval of its Plan for an Alternative Form of Regulation (NJ Docket T092030358).

He has conducted analysis of a wide range of quantitative issues in the telecommunications and cable television industries, some of which are represented in the following studies:

Roddy, D. "Competitive Provision of Alternative Local Services: A Business Case Analysis", Chapter 5 in *The Enduring Local Bottleneck, Monopoly Power and the Local Exchange Carriers*, Economics and Technology, Inc. and Hatfield Associates, Inc: Boston, Mass., February, 1994.

Roddy, D. and R. Mayer, "Consumer Interest in New Communications, Information, and Entertainment Services: Statistical Analysis of New Survey Data", *Presented at the Meetings of the Southeastern Association of Regulatory Commissioners*, Orlando, Florida, June 15, 1993.

Roddy, D., "The Effects of Adding Addressability to the FCC's Cable TV Benchmark Regression Model", submitted August 25, 1993 in FCC MM Docket

93-215, Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992, on behalf of Continental Cablevision, Inc.

Roddy, D., "Cost of Service Study for AMRAC Clear View Cable TV and Analysis of Compliance with the Commission's Rate Freeze Orders" submitted November 10, 1993 in connection with FCC MM Dockets 92-266 and 93-215, Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992, on behalf of AMRAC Clear View Cable TV.

Roddy, D., "The Relationship Between Telecommunications Investment and Economic Development: A Multi-Country Statistical Study", *Economics and Technology, Inc.*, September, 1993 prepared for the Government of Mexico, Secretaria de Communicaciones y Transportes.

Roddy, D., Economics and Technology, Inc, Theodore Barry and Associates, and Scott, Madden and Associates, *Potential Performance Gains of New York Telephone*, for the New York Public Service Commission, November, 1992. (Statistical and Econometric Chapters)

Roddy, D., "Analysis of FAS 106 Effects Under Price Caps: A Test Case for LEC Price Cap Regulation by the FCC" (with Page Montgomery), submitted July 1, 1992 in FCC Docket 92-101, *Treatment of Local Exchange Carrier Tariffs Implementing State of Financial Accounting Standards* on behalf of the Ad Hoc Telecommunications Users Committee and the International Communications Association.

Prior to joining ETI, Dr. Roddy was a Senior Economist with Data Resources, Inc., a nationally known consulting firm. There he developed computer-based economic models for clients in the telecommunications and automotive industries and made contributions to DRI's 1200-equation macroeconomic forecasting model. Before that, Dr. Roddy was an Instructor at the Business School at the University of New Hampshire, Durham. There he taught graduate and undergraduate courses in Economics, Econometrics, Industrial Organization and Regulation, and Quantitative Methods. Prior to graduate school at the University of Wisconsin, Dr. Roddy was a staff economist with the Antitrust Division, U.S. Department of Justice. There he conducted economic and financial analyses in connection with antitrust cases and investigations in both regulated and unregulated industries.

CERTIFICATE OF SERVICE

I, Sonia J. Arriola, a secretary in the law firm of Gardner, Carton & Douglas, certify that I have this 27th day of May, 1994, caused to be sent by first-class U.S. mail, postage-prepaid, a copy of the foregoing MOTION TO COMPEL PRODUCTION OF SUPPORTING DATA to the following:

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